



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,065	11/02/2001	Danish Ali	GB 000160	4841
24737	7590	09/20/2005	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			WONG, LINDA	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

✓

Office Action Summary	Application No. 10/003,065	Applicant(s) ALI, DANISH	
	Examiner Linda Wong	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/14/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed Applicant's Arguments have been fully considered but they are not persuasive. Applicant should submit an argument under the heading "Remarks" pointing out disagreements with the examiner's contentions. Applicant must also discuss the references applied against the claims, explaining how the claims avoid the references or distinguish from them.
2. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).
3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The drawings were received on 6/14/05. These drawings are accepted.

Specification

5. Guidelines for the format of the specification are suggested, but proper declaration of the claims is necessary. Proper declaration of what is claimed must be determined before the claims are mentioned.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. **Claims 2,3,4,5,6** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention: Claim 2 recites the limitation "means for multiplying the delayed signal from the variable delay means by the complex conjugate of the indication of its strength and applying the result to the combining means." In the specification, the multiplier mentioned is taught on page 5, lines 27-29, but the specification teachings are different from the limitation as recited in the claim. The specification states "In the multiplier 48 the signal from the delay stage 50 is multiplied by the complex conjugate of the correlation obtained from the correlator CR2 to provide a best version of the signal". The specification does not teach multiplying the indication of the strength of the received signal with the delayed

Art Unit: 2634

signal. Also, the teaching of the "deriving an indication of the strength of the received signal" cannot be found in the specification.

7. **Claim 3, lines 12-13**, recites the limitation of "the indication of the strength of the received signal in the signal path." The same rejection for claim 2 also applies to claim 3.
8. **Claim 4, lines 11-12**, recites the limitation of "the indication of the strength of the received signal in the signal path." The same rejection for claim 2 also applies to claim 4.
9. **Claim 5, lines 13-14**, recites the same limitation of "the indication of the strength of the received signal in the signal path." The same rejection for claim 2 also applies to claim 5.
10. **Claim 6, lines 18-19**, recites the same limitation of "the indication of the strength of the received signal in the signal path." The same rejection for claim 2 also applies to claim 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 1 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Rademacher (US Patent No.: 6570918) in view of El-Tarhuni et al (US Patent No.: 6201828) and further in view of Widdowson (US Patent No.: 6807222).

- a. **Claim 1**, Rademacher discloses a rake receiver comprising an analog to digital converter, a PN code generator comprising combining the PN code, combining the outputs from the rake receiver fingers and recovering the data after combining. Although Rademacher does not disclose a variable delay, correlating the delayed signal with the PN code generated and a filtered PN code, El-Tarhuni et al discloses a rake receiver receiving an input signal, a signal processing means comprising a variable delay, PN code generator, correlating the delayed signal with the PN code generated. (Fig. 3, labels 124,102,106,104, and 108) It would be obvious to one skilled in the art to combine use the processing of input signal found in the rake receiver disclosed by El-Tarhuni et al to "determine the transmission delay of a spread-spectrum signal to an accuracy of at least within one-eighth of a PN chip duration at low cost and with low complexity." (Col. 2, lines 36-39) Although Rademacher and El-Tarhuni does not teach a filtered PN code, Widdowski discloses a code division multiple access (CDMA) receiver wherein the PN code is filtered by a notch filter and used for despreading with the input signal. (Fig. 8, labels 27, 26 and 25 and Col. 5, lines 51-65) It would be obvious to one skilled in the art to use a filtered PN code to achieve reduce noise bandwidth.

- b. **Claim 9**, Rademacher discloses a filtering means or a threshold device for filtering the signal path output from the combining means. (Fig. 3, labels 32 and 34)

Note: Rejection of claims 2 and 3 are made based on the Applicant's specification as opposed to the limitations recited due to the 35 U.S.C. 112, first paragraph rejection.

12. **Claims 2, 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rademacher (US Patent No.: 6570918) in view of El-Tarhuni et al (US Patent No.: 6201828), further in view of Widdowson (US Patent No.: 6807222) and further in view of Aue (US Publication No.: 20020051486)

- a. **Claim 2**, El-Tarhuni et al discloses a signal deriving means coupled to the output of the code generation (Fig. 3, labels 124, 108, 104 and 106) and to the variable delay means (Fig. 3, label 102), wherein the signal deriving means derives an early-late timing error signal (Fig. 3, labels 108, 104, 106). The timing error signal is used to adjust the variable delay (Fig. 3, output from labels 108, 104 and 106 to input of label 122 and 102). Although El-Tarhuni does not disclose multiplying the delayed signal with the complex conjugate of the on-time correlation as shown in Fig. 1 and page 5, lines 23-29 of the Applicant's specification, Aue discloses a rake receiver, comprising calculating the early-late correlations and multiplying the complex conjugate of the on-time correlation with a filtered or delayed input signal, wherein the multiplied output is coupled to a combiner. (page 1, paragraph [0001], lines 4-9 and Fig. 9, labels

Rake-Finger 1-K and Combiner) It would be obvious to one skilled in the art to incorporate a multiplier for multiplying the complex conjugate of the on-time correlation to a delayed signal to generate "the receiving signal with the greatest possible signal-to-noise ratio." (page 2, paragraph [0021])

- b. **Claim 3** inherits the limitation of a filtered PN code as recited in claim 1, but claim 1 does not recite all the limitations of claim 4. El-Tarhuni et al discloses a code generation means comprises early, on-time and late outputs (Fig. 3, labels 124, "-1/2", "0", and "+1/2") and a signal deriving means comprising a first, second and third correlators (Fig. 3, labels 108, 104, 105), wherein the first input to the correlators is the output from the variable delay means (Fig. 3, label 102 and output from label 102 to labels 108, 104, 106), and the second input is either an early, on-time or late output from the code generation means (Fig. 3, labels "-1/2", "0", and "+1/2") and compute offset means having inputs to all the correlators but computing the offset between the early and late correlations. (Fig. 3, outputs from labels 110, 112, and 114, 116 and Col. 5, lines 36-57)
- Although El-Tarhuni et al does not disclose a correlator for outputting a correlation between the complex conjugate of the on-time correlation and the delayed signal from the variable delay, Aue discloses multiplying or correlating the complex conjugate of the on-time signal with a delayed signal. (page 1, paragraph [0001], lines 4-9 and Fig. 9, labels Rake-Finger 1-K and Combiner)
- It would be obvious to one skilled in the art to incorporate a multiplier for multiplying the complex conjugate of the on-time correlation to a delayed signal

to generate "the receiving signal with the greatest possible signal-to-noise ratio." (page 2, paragraph [0021])

13. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rademacher (US Patent No.: 6570918) in view of El-Tarhuni et al (US Patent No.: 6201828), further in view of Widdowson (US Patent No.: 6807222), further in view of Aue (US Publication No.: 20020051486) and further in view of Bultan et al (US Publication No.: 20040057506).

a. **Claim 7**, Although Rademacher, El-Tarhuni et al, Widdowson, and Aue fail to teach correlators including integrate and dump stages, Bultan et al discloses a rake receiver comprising late, early and punctual signals, all correlated respectively with first, second and third correlators, wherein the correlators comprises integrate and dump stages. (Fig. 2, labels Late, Early, Punctual, all inputted in to correlators, and labels 12a, 12b and 21) It would be obvious to one skilled in the art to include integrate and dump stages after correlation to maintain the bandwidth and damping ratio of the loop regardless of changes with input signal power level. (page 1, paragraph [0008])

Allowable Subject Matter

14. **Claims 4,5,6** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 2634

15. **Claim 8** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linda Wong



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600